

TITLE: A CERAMIC SPINDLE FOR A FAUCET IN TEMPERATURE
CONTROL

BACKGROUND OF THE INVENTION

(a) Technical Field of the Invention

5 The present invention relates to a ceramic spindle for a faucet, and in particular, the spindle used in temperature control mechanism to control water flow into cold/hot water tube in a certain proportion to provide the required water temperature. The water after mixed is flowing out through the tube 5 and the water flow rate control mechanism 3 to the shower head.

10 (b) Description of the Prior Art

FIG. 2 is a conventional spindle body 1 including a housing 10, a rotating shaft module 20, a water-distribution disc 30, a water guiding disc 40 and a cap 50. The bottom section of the housing 10 is opened and the top section is a protruded edge having a shaft hole. The two lateral sides at the inner
15 surface of the housing is provided with a protruded block 101.

The rotating module 20 is mounted within the housing 10 wherein the rotating shaft 21 at the top section passes through the top portion of the housing. The two sides of the driven plate 22 at the bottom section are provided with rotating-stop protruded block 222 and the bottom face is
20 mounted with a plurality of the engaging protruded block 221. The top face

of the water-distribution disc 30 is provided with corresponding slot 30 which is engageable with the protruded block 221 such that the water-distribution disc 30 is driven to rotate by the driving plate 22. The bottom face of the water-distribution disc 30 is provided with a water-distribution slot 302 so that it urges the top face of the water-guiding plate 40. The water-guiding plate 40 urges the top face of the cap 50 and the similar position of the water-guiding plate 40 and the cap 50 are provided with two inlets 401, 402 and 501, 502 and a water outlet 403, 503. The body of these components after combined is installed within a temperature-control mechanism 2, as shown in FIG. 1. The operation of the combination is as follows. Cold and hot water via the cold and hot water tube are respectively guided via the inlets 501, 502 of the cap 50, and via the inlets 401, 402 of the water-guiding disc 40 into the water-distribution slot 302 of the water-distribution disc 30. The cold and hot water are mixed at the water-distribution slot 302 and is then guided via the water outlet 401 of the water-guiding disc 40 and the water outlet 503 of the cap 50 to the water outlet tube. The temperature control of the water is by using the water-distribution slot 301 of the water distribution disc 30, and the water inlet hole and the surface of the water outlet. The conventional spindle employs the protruded block 222 of the driving plate 22 and the protruded block 101 of the housing to achieve the limiting of the

rotational of the adjusting button but the engaging components of the ceramic spindle is mounted within the internal of the spindle. The limitation of left and right rotation is a single configuration and cannot be adjusted.

Accordingly it is an object of the present invention to provide a ceramic

5 spindle for a faucet, which overcomes the above drawback.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a ceramic spindle for a faucet comprising a housing, a rotating shaft module, a water-distribution disc and a water-guiding disc. The ceramic spindle is characterized in that the top portion of the housing is mounted onto a rotating rim seat and on the rotating shaft of the shaft module a mounting rim is fitted so that the combination of the mounting rim and the rotating rim seat can restrict the limit of the left and right rotation.

Yet another object of the present invention is to provide a ceramic spindle for a faucet, wherein a rotating-stop component is mounted at the external of the housing, and therefore any of rotating-stop components can be replaced easily.

A further object of the present invention is to provide a ceramic spindle for a faucet, wherein the ceramic spindle can be fitted to any type of faucets.

The foregoing object and summary provide only a brief introduction to the present invention. To fully appreciate these and other objects of the present invention as well as the invention itself, all of which will become apparent to those skilled in the art, the following detailed description of the invention and the claims should be read in conjunction with the accompanying drawings.

Throughout the specification and drawings identical reference numerals refer

to identical or similar parts.

Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which a preferred
5 structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional view of a ceramic spindle for a faucet in accordance with the present invention.

FIG. 2 is an exploded perspective view of a conventional spindle used in
5 a faucet.

FIG. 3 is a perspective exploded view of the ceramic spindle for a faucet in accordance with the present invention.

FIG. 4 is a perspective view of the ceramic spindle for a faucet of the present invention.

10 FIGS. 5A and 5B illustrate configurations of a water-distribution disc in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The following descriptions are of exemplary embodiments only, and are not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient

5 illustration for implementing exemplary embodiments of the invention.

Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention as set forth in the appended claims.

Referring to FIGS. 3 and 4, there is shown a ceramic spindle for a faucet
10 comprising a housing 10, a rotating shaft module 20, a water-distribution disc 30, a water-guiding disc 40 and a cap 50 combined to form the body 1. The top section of the housing 10 is a rim seat 60 mounted with a rotating-stop mounting rim 70. The bottom section of the housing 10 is opened, the top portion of the housing is provided with a rim side having teeth 111 and the
15 center thereof is a protruded edge 11 with a shaft hole. The rotating shaft module 20 includes a rotating shaft 20 fastened to the protruded edge at the center of the top portion of the driving plate 22, which is directly inserted into the housing 10 so that the protruded edge of the driving plate 22 is positioned at the shaft hole of the housing 10, and the rotating shaft 21 passes through the
20 shaft hole to connect with other component. The bottom face of the driving

plate 22 is provided with a plurality of engaging protruded block 221. The top face of the water-distribution plate 30 is provided with corresponding engaging slot 301 so that when the top face of the water-distribution disc 30 and the bottom face of the driving plate 22 approach to each other, the

5 protruded block 221 will be engaged with the engaging slot 301 and the water-distribution disc 30 will be rotated with the driving plate 22. The bottom face of the water-distribution slot 30 is a butter-fly shape water distribution slot 302 to urge at the top face of the water-guiding disc 40. The corresponding positions of the water-guiding disc 40 and the

10 water-distribution slot 302 are provided with two water inlet holes 401, 402 and a water outlet hole 403. The cap 50, close to the bottom section of the water-guiding disc 40 covers the opening at the bottom section of the housing

10. The disc face is provided with water inlet holes 501, 502 and water outlet hole 503 corresponding to that of the water-guiding disc such that when

15 it is positioned into the rotating button mechanism, the water-inlet holes 501, 502 are respectively in communication with the cold and hot water tube, and the water outlet hole 503 is in communication with the water outlet tube. In accordance with the present invention, the protruded edge 11 at the rim edge having teeth 111 at the top portion of the housing 10 is mounted with a

20 rotating rim seat 60 and a rotating-stop mounting rim 70. As shown in FIG.

3, the rotating rim seat 60 is provided with a mounting hole 601 and teeth 602 are provided at the internal rim face of the mounting hole which are corresponding to the protruded edge of the housing such that when the two components can be engageable mounted. The teeth 111 602 are respectively
5 provided with a positioning section 112 and 603 such that the rim seat 60 and the protruded edge 11 can be engaged together and provide a specific connecting position. The top end, at one side of the rim seat 60 is upwardly extended to form a protruded positioning block 604. A rotating-stop mounting rim 70 with a shaft hole 701 is mounted onto the rotating shaft 21 so
10 that it can be driven to rotate. The edge face of the rim is formed into teeth face which is a gear structure. One side of the rim edge is a protruded rotating-stop protruded block 702. By rotating of the rotating shaft 21 and the urging of the positioning block 604 and the protruded block 702, the rotating shaft 21 can be stopped so as to control the left-and-right rotating
15 range of the rotating shaft 21 which drives the water-distribution disc 40 to control the temperature of the water. Further, the rim seat 60 and the rotating stop mounting rim 70 are mounted at the exterior of the body, a plurality of rotating-stop mounting rim can be mounted or the rotating-stop rim with various of sizes of the protruded block can be mounted onto the rim seat 60,
20 the limit of the rotating of the rotating shaft 21 can be easily changed so that

the cold and hot water inlet hole and outlet hole can be changed and the ceramic spindle can be used or installed onto all kinds of faucets.

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods
5 differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claim, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device
10 illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.